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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-7367

TO: DANIEL HARKAN, USEPA REGION II
FROM: PTD PETER DI PASCA, TAT PM & JULIAN HILL, TAT QC *JH*
SUBJECT: Documentation of Transmittal
SITE: IDEAL COOPERAGE
TDD#: 02-8910-02
DATE: NOVEMBER 27, 1989

The purpose of this memo is to document the transmittal of the following:

_____ Letter Report DCN# _____
_____ OSC Report Draft/Final DCN# _____
_____ Photographs
_____ Analytical Data
_____ POLREP
☒ Safety Plan DCN# TAT-02-F-05560 - DRAFT #2, FINAL
_____ Community Relations Plan DCN# _____
_____ Sampling Plan DCN# _____
_____ Sampling Report DCN# _____
_____ Action Memorandum DCN# _____
_____ SPCC Report
_____ Site Maps
_____ Other _____

cc: TAT PM
TDD File
TAT SAFETY PLAN FILE

TAT-02-F-05560

SITE SAFETY PLAN

Project Name: Ideal Cooperage
3 - 25 New York Avenue
Jersey City, Hudson County, NJ 07307

TAT Subcontract #: H0402

TAT Technical Direction Document #: 02-8910-02

TAT Site I.D.#: WO 468

Prepared in Conjunction With
The U.S. Environmental Protection Agency,
Emergency and Remedial Response Division
and
Roy F. Weston, Inc.

FOR:
The U.S. Environmental Protection Agency
Region II - Emergency Response Section

Adopted By: _____
For Code Environmental Services, Inc.

Date: _____

Adopted By: William Kowalski
For Roy F. Weston, Inc.

Date: 11/8/89

Adopted By: _____
For U.S. EPA

Date: _____

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- ATTACHMENT C - COLD STRESS
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OPTIONAL ATTACHMENTS

- OSHA GUIDANCE AND REGULATIONS
- CONFINED SPACE ENTRY PROCEDURES
- CHEMICAL HAZARD INFORMATION (MSDS SHEETS)
- LIQUID TRANSFER SOP
- DRUM HANDLING SOP
- D ● DRUM SAMPLING SOP
- DRILL RIG SOP
- SITE ENTRY SOP
- F ● EXCAVATION SOP
- LEVEL A DECON PROCEDURES
- DEMOLITION SOP
- HAZARDOUS WASTE STORAGE SOP
- TRUCK LOADING SOP
- E ● SOIL SAMPLING SOP
- LIQUID SAMPLING SOP

GLOSSARY OF ACRONYMS

ANSI	- AMERICAN NATIONAL STANDARDS INSTITUTE
APR	- AIR PURIFYING RESPIRATOR
ACGIH	- AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
CFR	- CODE OF FEDERAL REGULATIONS
CES	- CODE ENVIRONMENTAL SERVICES, INC.
HNU-PID	- HNU PHOTOIONIZATION DETECTOR
IDLH	- IMMEDIATELY DANGEROUS TO LIFE & HEALTH
NIOSH	- NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY & HEALTH
OSC	- ON-SCENE COORDINATOR
OSHA	- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVA	- ORGANIC VAPOR ANALYZER
PPM	- PARTS PER MILLION
SCBA	- SELF-CONTAINED BREATHING APPARATUS
SM	- SUBCONTRACTOR MANAGER
SOP	- STANDARD OPERATING PROCEDURE
SPCC	- SPILL PREVENTION CONTROLS & COUNTERMEASURES
TAT	- TECHNICAL ASSISTANCE TEAM
TLV	- THRESHOLD LIMIT VALUE
U.S. EPA	- U.S. ENVIRONMENTAL PROTECTION AGENCY

INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed for this project to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received or conditions change and a safety plan modification is necessary to ensure the safety of workers or the public. A written amendment will document all changes made to the plan. Amendments to this plan are included in Attachment A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

DAILY SAFETY MEETINGS

Daily safety meetings will be held at the start of each shift to ensure that all personnel understand site conditions and operating procedures, to ensure that personal protective equipment is being used correctly and to address worker health and safety concerns.

SITE SAFETY PLAN ACCEPTANCE ACKNOWLEDGEMENT

The OSC or designated representative shall be responsible for informing all individuals entering the exclusion zone of the contents of this plan and ensuring that each person signs the Safety Plan Acknowledgment Form in Attachment 2. By signing the Safety Plan Acknowledgment Form, individuals are recognizing the hazards present on-site and the policies and procedures required to minimize exposure or adverse effects of these hazards.

TRAINING REQUIREMENTS

All personnel (including visitors) entering the exclusion zone must have completed training requirements for hazardous waste site work in accordance with OSHA 29 CFR 1910.120, or be qualified by previous training or experience. Documentation of training requirements is the responsibility of each employer.

MEDICAL MONITORING REQUIREMENTS

All personnel (including visitors) entering the exclusion zone must have completed appropriate medical monitoring requirements required under OSHA 29 CFR 1910.120(f). Documentation of medical monitoring is the responsibility of each employer. If there are additional medical monitoring requirements for this site, evidence of compliance must also be included.

FIT TESTING REQUIREMENTS

All personnel (including visitors) entering the exclusion zone using a full-face negative pressure respirator must have successfully passed a qualitative respirator FIT test in accordance with OSHA 29 CFR 1910.1025; 1926.58; or, ANSI within the last 12 months. Documentation of FIT testing is the responsibility of each employer. If applicable, quantitative FIT testing is required for the use of negative pressure respirators for protection against airborne asbestos fibers and lead.

1.0 SITE BACKGROUND AND SCOPE OF WORK

1.1 ROLES AND RESPONSIBILITIES

On-Scene Coordinator (OSC):

The OSC, as the representative of the U.S. EPA, is responsible for overall project administration and for coordinating health and safety standards for all individuals on-site at all times. All applicable OSHA standards shall be applied. However, each contractor (as an employer under OSHA) is also responsible for the health and safety of its employees. If there is any dispute with regards to health and safety, the following procedures shall be followed:

- 1) Attempt to resolve the issue on-site; and,
- 2) If the issue cannot be resolved, on-site personnel shall consult off-site supervisors for assistance and the specific task operation in dispute shall be discontinued until the issue is resolved.

Subcontractor Manager (SM):

The Subcontractor Manager, as the field representative for CES, has the responsibility for fulfilling the terms of the subcontract. The SM must oversee the project and ensure that all technical, regulatory and safety requirements are met. It is the SM's responsibility to communicate daily with the WESTON Field Representative regarding site clean-up progress and any problems encountered.

Technical Assistance Team (TAT):

The Technical Assistance Team is responsible for providing the OSC with assistance and support in regards to all technical, regulatory and safety aspects of site activity. The TAT is also available to advise the OSC on matters relating to sampling, treatment, packaging, labeling, transport, and disposal of hazardous materials, but is not limited to the above-mentioned.

1.2 Key Personnel

U.S. EPA On-Scene
Coordinator (OSC):

Joseph Rotola
U.S. EPA Region II
Edison, NJ 08837
(201) 321-6694

Alternate OSC:

Daniel Harkay
U.S. EPA Region II
Edison, NJ 08837
(201) 321-6614

TAT Subcontractor:

Code Environmental Services
P.O. Box A-10
Jernee Mill Road
Sayreville, NJ 08872
(201) 613-6515

Subcontract Manager (SM):

Thomas Uzzo

Site Health & Safety Officer:

OSC

Alt. Health & Safety Officer:

Peter Di Pasca, Jr.

Technical Assistance Team (TAT):

Roy F. Weston, Inc.
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
(201) 225-6116

TAT (WESTON) Representative:

Peter Di Pasca, Jr.

1.3 Site Background

The Ideal Cooperage site is located on New York Avenue in Jersey City, Hudson County, New Jersey. A location map is provided in Attachment B. The site encompasses approximately 2 acres and is situated in an industrial section of the city. The site is bounded on the north and west by New York Avenue, on the south by the Erie-Lackawanna Rail Line and on the east by a developed lot. The elevated property is relatively flat, with the northern, eastern and southern perimeters sloping downward toward the property line. A site map is provided in Attachment B. Low brush and small trees cover the surface area of the site.

During the 1970's, Ideal Cooperage Inc. used the site for drum reconditioning operations. The actual rinsing and reconditioning of the drums were performed on an adjacent lot; the lot under investigation was used for empty drum storage. In the fall of 1981, Ideal Cooperage ceased operations and filed for bankruptcy. The property used for drum processing was sold and redeveloped. The lot used for drum storage was sold to the former principals of the company.

Assessments performed by the New Jersey Department of Environmental Protection (NJDEP) and, more recently, by the U.S. EPA Technical Assistance Team (TAT), have identified approximately 600 drums on-site. Most of the drums are empty, however about 10% contain material. Since the drums containing liquid are upright and missing bungs, the liquid may be rainwater. Most of the empty drums are severely deteriorated and appear to have been on the property for several years. A subsurface soil investigation conducted by a private consultant several years ago identified low levels of toluene, perchloroethylene, and petroleum hydrocarbons. Available site data indicate drums may be buried below the surface of the property.

The site has been used in recent years as an illegal dump for household garbage, construction debris, and abandoned automobiles. Seventeen rolloff containers of solid waste were cleared from the site by the City of Jersey City, but lack of security prevented keeping the property free of trash. In April, 1989, the Jersey City Department of Engineering repaved New York Avenue and installed sidewalks, guard rails, catch basins, and a chain-link fence around the site. These renovations have improved conditions at the site considerably. However, neighborhood children continue to use the site as a playground, and have constructed a "fort" using empty drums.

1.4 Scope of Work for TAT Subcontractor

CES will provide the following services:

1. Site preparation as required, such as brush removal, scrap material removal, and minor grading.
2. Staging and segregation of all surficial drums. Overpack and/or transfer contents from deteriorated drums, as required. The staging area to be determined at the discretion of the WESTON Field Representative and the EPA OSC.
3. Excavation of six test pits to a maximum depth of 16 feet. Locations to be determined at the discretion of the WESTON Field Representative and the EPA OSC.

The Subcontractor's activity will be monitored by Peter Di Pasca, designated by WESTON to act as the authorized WESTON representative (hereafter WESTON Field Representative) to administer this subcontract. Neither oral nor written statements by anyone other than WESTON, or the WESTON Field Representative, may modify or otherwise affect any provision of this subcontract. Replacement of the WESTON Field Representative will be in writing. WESTON will have technical personnel on-site to monitor all site operations.

1.5 Scope of Work for TAT

TAT will provide technical assistance for all services required to stage drums and excavate test pits at the Ideal Cooperage site. Instruments to be used for site monitoring are the HNu (photoionization detector) and the OVA (organic vapor analyzer). TAT will also observe and photodocument CES's on-site activities, and collect soil and drum samples. Other activities include cost accounting and any other site specific tasks which may require technical expertise.

2.0 TASK SAFETY AND HEALTH RISK ANALYSIS

This Hazard Assessment identifies the general hazards associated with specific site operations and presents an analysis of documented or potential chemical hazards that exist at the site. Every effort must be made to reduce or eliminate these hazards. Those which cannot be eliminated must be guarded against by use of engineering controls and/or personal protective equipment.

2.1 Activity Specific Hazards and SOPs

2.1.1 Hazards and SOPs Associated with Site Preparation:

- Hand and automatic tools
- Heavy machinery
- Slip, trip, fall
- Inhalation of dusts
- Punctures
- Noise

In order to safely and efficiently restage drums and excavate test pits, minor site preparation may be required. This activity may include the cutting and removal of brush and small trees, relocation and/or removal of scrap material, and minor grading of soil. Since tools such as clippers, sickles, and "weed wackers" may be used, care should be exercised to prevent hand or leg injuries. If a "Bobcat" or backhoe is used, operators must be aware of other personnel in the vicinity.

2.1.2 Hazards and SOPs Associated with Drum Staging & Segregation:

- Back strain
- Slip, trip, fall
- Splash hazard from open containers
- Inhalation of vapors/dusts

Proper lifting techniques must be used when restaging empty drums or overpacking solids drums. When moving drums containing material are restaged, one must be aware that many drums are missing bungs and may have a tendency to splash. If liquid needs to be transferred from containers in order for the containers to be moved, hand pumps will be used and a splash hazard will again be present.

2.1.3 Hazards and SOPs Associated with Test Pit Excavation:

- Heavy Machinery
- Slip, trip, fall
- Noise
- Inhalation of dust

When the backhoe is being used, the operator must be aware of other personnel in the vicinity. When walking, personnel should also be conscious of pits that have already been excavated. No personnel are to enter an excavation. If buried drums are discovered, the excavation will be backfilled.

2.1.4 Hazards and SOPs Associated with Drum Sampling:

- Splash hazard from open containers
- Inhalation of vapors or dusts
- Punctures
- Slip, trip, fall

Most of the liquid is assumed to be rainwater. However, residues remaining in the drums may have contaminated the liquid. Therefore, all safety precautions for drum sampling must be followed.

2.1.5 Hazards and SOPs Associated with Soil Sampling:

- Inhalation of dusts
- Slip, trip, fall
- Heavy Machinery

Subsurface soil samples will be collected from the test pits via the backhoe bucket. Therefore, care should be exercised when working near the backhoe and the excavation pit.

2.2 General Site Hazards

Lighting - Work areas must have adequate lighting for employees to see to work and identify hazards (5-foot candles) minimum comparable to a single 75-100 watt bulb). Personnel should carry flashlights in all normally dark areas for use in the event of a power failure. Applicable OSHA standards for lighting - 29 CFR 1910.120 (m) - shall apply.

Electrical Power - All electrical power must have a ground fault circuit interrupter as part of the circuit. All equipment must be suitable and approved for the class of hazard. Applicable OSHA standards for electrical - 29 CFR 1926 Subpart "K" shall apply.

High or Elevated Work - All work over four-foot in elevation or where a fall potential exists will be performed using appropriate ladders and/or fall protection (i.e. body harness and lifeline).

Drum Handling - The movement and opening of drums will be done in accordance with 29 CFR 1910.120 (j).

Cold Stress - When the temperature falls below 40°F, cold stress protocol shall be followed. Employees must be supplied with adequate clothing to maintain core temperature. Cold stress is

discussed in detail in Attachment C.

Eye Wash Protection - All operations involving the potential for eye injury, splash, etc., must have approved eye wash units locally available as per 29 CFR 1910.151 (c).

Fire Protection/Fire Prevention - Operations involving the potential for fire hazards shall be conducted in a manner as to minimize the risk. Non-sparking tools and fire extinguishers shall be used or available as appropriate. Sources of ignition shall be removed. When necessary, explosion-proof instruments and/or bonding and grounding will be used to prevent fire or explosion.

Utilities - Overhead and underground utility hazards shall be identified and or inspected prior to conducting operations involving potential contact.

2.3 Suspected Chemical Hazards

Information recorded from drum labels during previous site assessments have indicated that the following chemical hazards potentially exist at the site. Since the majority of the drums contain rainwater, it is presumed that only trace quantities of these contaminants are be present in the drums.

Suspected Contaminant	TLV PEL	IDLH	Physical Characteristics	Routes of Exposure	Symptoms of Acute Exposure	First Aid	Instrument To Detect
Acetic Anhydride	5 ppm 5 ppm	1000 ppm	Colorless liquid, sharp odor	Inh. Ing. Abs.	Skin burns, nausea, dermatitis	Eye: irr. immed. Skin: water flush Breath: art. resp. Swallow: med. attn. immediately	OVA
Carbon Tetra-chloride	5 ppm 10 ppm	NA	Colorless liquid with ether-like odor	Inh. Ing. Abs.	CNS depression, nausea, vomiting, skin irritation	Eye: irr. immed. Skin: soap wash Breath: art. resp. Swallow: med. attn immediately	HNU, OVA
Caustic Soda (Sodium Hydroxide)	2 mg/m ³ 2 mg/m ³	250 mg/m ³	Colorless, odorless solid	Inh. Ing. Abs.	Nose irritation, skin and eye burns	Eye: irr. immed. Skin: water flush Breath: art. resp. Swallow: med. attn. immediately	pH Paper
Sodium Cyanide	5 mg/m ³ 5 mg/m ³	50 mg/m ³	White solid, almond odor	Inh. Ing. Abs.	Nausea, vomiting, skin irritation	Eye: irr. immed. Skin: soap wash Breath: art. resp. Swallow: med. attn. immediately	Monitox

3.0 TRAINING AND FIT TESTING REQUIREMENTS

Refer to Introduction for Site Entry Requirements.

4.0 PERSONAL PROTECTIVE EQUIPMENT

The following is a brief description of the personal protective equipment which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used: Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment.

4.1 Level A Protection Shall Be Used When:

- o The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- o Substances with a high degree of hazard to the skin are known or suspected;
- o Chemical concentrations are known to be above IDLH levels;
- o Biological hazards requiring Level A are known or suspected; or,
- o Unknown organic vapor concentrations range from 500 - 1,000 ppm.

4.1.1 Level A Protective Equipment at a Minimum Shall Consist of:

- o Fully encapsulating exposure suit (selected for resistance to chemical(s) at the site);
- o Chemical resistant boot covers worn over safety-toe work boots;
- o Chemical resistant outer gloves (disposable);
- o Chemical resistant inner gloves (disposable);
- o Pressure demand SCBA or airline system with egress bottles;
- o Hard-hat;
- o Disposable outer suit (optional);
- o Use of the "buddy system" for site entry personnel and appropriate back-up support personnel.

4.2 Level B Protection Shall Be Used When:

- o The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- o Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- o Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible;
- o Confined space entry requires Level B; or,
- o Unknown organic vapor concentrations range from 5 - 500 ppm and a significant skin hazard is not anticipated.

4.2.1 Level B Protective Equipment at a Minimum Shall Consist of:

- o Chemical-resistant coverall: Poly-coated/Paper Tyvek;
- o Steel-toe work boots with chemical-resistant overboots or disposable boot covers: Rubber;
- o Disposable inner gloves, surgical type;
- o Disposable outer gloves: Neoprene;
- o Supplied air-pressure demand SCBA or airline system with 5-minute egress bottle;
- o Hard hat; and,
- o All joints taped with duct tape.

NOTE:

Use of Level B personal protective equipment requires that two (2) persons must be available as backup ready to provide emergency assistance.

4.3 Level C Protection Shall Be Used When:

- o The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- o The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants;
- o The substance has adequate warning properties and all criteria for the use of APR respirators has been met; and,
- o 1 - 5 ppm of unknown organic vapors above background levels are anticipated.

4.3.1 Level C Protective Equipment at a Minimum Shall Consist of:

- o Chemical-resistant coveralls: Polycoated/Paper Tyvek;
- o Steel-toe work boots with chemical-resistant overboots or disposable boot covers: Rubber;
- o Disposable inner gloves, surgical type;
- o Disposable outer gloves: Neoprene/Solvex/Nitrile;
- o Full-face air purifying respirator (APR);
- o Chemical cartridge or canister type;
- o Hard hat; and,
- o All joints taped with duct tape;

Note:

Tyvek may be substituted as coveralls and surgical gloves as disposable outer gloves when only a dust contaminant is present.

4.4 Level D Protection Shall Be Used When:

- o The atmosphere contains no known hazard; and,
- o Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

4.4.1 Level D Protection Equipment at a Minimum Shall Consist of:

- o Standard work uniform or coveralls;
- o Safety-toe work boots;
- o Gloves as needed;
- o Safety glasses;
- o Splash shield as needed; and,
- o Hard-hat.

4.5 Safety Equipment Which May Be Required For Specific Tasks:

- o Chemical-resistant aprons;
- o Acid suits;
- o Goggles;
- o Face shields;
- o Five-minute escape device;
- o Welders goggles or shields; and,
- o Hearing protection.

4.6 Activity Specific Levels of Protection:

The required level of protection is specific to the activity being conducted. At this site, the minimum levels of protection are as follows:

<u>Activity</u>	<u>Level of Protection</u>	<u>Special Requirements</u>
Site Preparation	C	None
Staging and Segregating Drums	C	When handling drums that are empty
	B	When handling drums that contain material
Test Pit Excavation	C	With escape packs
	B	If hazardous material is discovered
Drum Sampling	B	None
Soil Sampling	C	None
Entry and Air Monitoring in Hot Zone for Any Activity	C	Locations outside hot zone may be monitored in Level D

5.0 MEDICAL MONITORING REQUIREMENTS

Refer to Introduction for Site Entry Requirements.

6.0 AIR MONITORING AND ACTION LEVELS

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site.

6.1 Routine Air Monitoring Requirements:

- o Upon initial entry to rule out IDLH conditions;
- o When the possibility of an IDLH condition or flammable atmosphere has developed;
- o When work begins on a different portion of the site;
- o Contaminants other than those previously identified are being handled;
- o A different type of operation is initiated;
- o Employees are handling leaking drums or containers or working in areas with obvious liquid contamination; and,
- o Continuously during confined space work.

Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and submitted to the OSC and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

6.2 Site Specific Air Monitoring Requirements:

Instrument	Compounds To Detect	Frequency	Comments/ Action Level
HNU-PID OVA	Organic vapors and gases	Periodically & as determined by OSC & Section 6.1	>5 ppm upgrade PPE for unknowns ~TLV upgrade to Level B for knowns >500 ppm upgrade to Level A

7.0 SITE CONTROL AND STANDARD OPERATING PROCEDURES

7.1 Work Zones:

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons. At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry. Site work zones will include:

7.1.1 Exclusion Zone:

The exclusion zone will be the "hot-zone" or contaminated area inside the site perimeter. Entry to and exit from this zone will be made through a designated point and all personnel will be required to sign the hot zone entry/exit log located at the decon area. Appropriate warning signs to identify the exclusion zone should be posted (i.e. "DANGER - AUTHORIZED PERSONNEL ONLY", "PROTECTIVE EQUIPMENT REQUIRED BEYOND THIS POINT", etc.) Exit from the exclusion zone must be accompanied by personnel and equipment decontamination as described in Section 8.0.

7.1.2 Decontamination Zone:

The decontamination zone will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. All personnel and equipment should exit only via the decon area. A separate decontamination area will be established for heavy equipment.

7.1.3 Clean Zone:

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

All personnel arriving in the support zone should upon arrival, report to the command post and sign the site entry/exit log.

7.2 General Field Safety and Standard Operating Procedures:

- o The "buddy system" will be used at all times by all field personnel. No one is to perform field work alone. Maintain visual, voice or radio communication at all times.
- o Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contact by bagging.
- o Eating, drinking, or smoking is permitted only in designated areas in the support zone.
- o Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activities.
- o Beards or other facial hair that interferes with respirator fit are prohibited.
- o All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- o All personnel exiting the exclusion zone must go through the decontamination procedures described in Section 8.0.
- o Safety Equipment described in Section 4.0 will be required for all field personnel unless otherwise approved by the Site Health and Safety Officer.
- o Practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs.

8.0 DECONTAMINATION PROCEDURES

In general, everything that enters the exclusion zone at this site, must either be decontaminated or properly discarded upon exit from the exclusion zone. All personnel, including any state and local personnel must enter and exit the hot zone through the decon area. Prior to demobilization, contaminated equipment will be decontaminated and inspected by the OSC before it is moved into the clean zone. Water used in the equipment decontamination procedure will be allowed to stay on-site without containment.

All personnel must sign the "HOT ZONE ENTRY/EXIT LOG" when entering and exiting the exclusion zone.

8.1 Procedures for Equipment Decontamination:

Following decontamination and prior to exit from the hot zone, the OSC or a designated alternate, shall be responsible for insuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.

8.2 Procedure for Personnel Decontamination:

This decontamination procedure applies to personnel at this site wearing Level B and C protection. These are the minimum acceptable requirements:

Station 1: Segregated Equipment Drop

Deposit equipment used on-site (tools, sampling devices and monitoring instruments, radios, etc.) on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

Station 2: Outer Boot and Outer Glove Wash and Rinse

Scrub outer boots and outer gloves with decontamination solution or detergent water. Rinse off using large amounts of water.

Station 3: Outer Boot and Glove Removal

Remove outer boots and gloves. If outer boots are disposable, deposit in container with plastic liner. If non-disposable, store in a clean dry place.

Station 4: Outer Garment Removal

Remove Chemical Resistant Outer Garments and deposit in container lined with plastic. Dispose of splash suits as necessary.

Station 5: Respiratory Protection Removal

Remove hard-hat, face-piece, and if applicable, deposit SCBA on plastic sheets. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off SCBA and store in safe place.

Station 6: Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 7: Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

NOTE: If a wet personnel decontamination procedure is deemed unnecessary, all protective clothing will simply be removed and bagged.

9.0 EMERGENCY RESPONSE PLAN

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

9.1 Emergency Contacts:

Fire: Central Ave near Pershing Field (201) 963-2400

Police: Central Ave near Hutton St. (201) 547-5477

Ambulance: Amb-U-Car, 275 New York Ave. (201) 656-8888

Hospital: Christ Hospital
176 Palisade Ave., Jersey City, NJ 07306
(201) 795-8200

Chemical Trauma Capabilities? Yes

Poison Control Center: 1-800-962-1253

Directions from Site to Hospital (See Map in Attachment B):

West on New York Avenue to Ravine Avenue (first cross-street). Right on Ravine Avenue for 1 block. Right on Palisade Avenue, and continue for 7 blocks. Hospital on left-hand side.

NOTE: Maps and directions to the hospital will be posted by the EPA and TAT Vehicles.

The route to the hospital was verified by Peter Di Pasca on February 16, 1989. Distance from site to hospital is one-half mile. Approximate driving time is 5 minutes. The fire, police, and hospital were notified of site operations by Peter Di Pasca on November 10, 1989.

The following individuals have been trained in CPR and First Aid:

Daniel Harkay

Peter Di Pasca

9.2 Additional Emergency Numbers:

Chemtrec	(800)-424-9300
TSCA Hotline	(800)-424-9065, (202) 544-1401
ATSDR	(Day) (404) 329-3311
	(Night) (404) 639-0615
AT & F (Explosives Info.)	(800) 424-9555
National Response Center	(800) 424-8802
Weston Medical Emergency Service	(513) 421-3063
Weston 24 Hour Hotline	(215) 524-1925, 1926
Pesticide Information Service	(800) 845-7633
EPA ERT Emergency	(201) 321-6660
RCRA Hotline	(800) 424-9346
CMA Chemical Referral Center	(800) 262-8200
National Poison Control Center	(800) 942-5969
U.S. DOT	(202) 366-0656 (Day only)
	(202) 426-2075 (Hotline)
Weston TAT Office	(201) 225-6116
TAT ZPMO	(215) 524-1160
U.S. EPA Region II R&P	
Branch Hotline	(201) 548-8730

9.3 EMERGENCY EQUIPMENT AVAILABLE ON-SITE

Communications Equipment

Location

Public Telephones:	Palisade Avenue, 2 blocks away
Private Telephones:	Next-Door to Site on East side
Mobile Telephones:	In EPA and TAT Vehicles
Two-Way Radios:	In EPA and TAT Vehicles

Medical Equipment

First Aid Kits:	In EPA and TAT Vehicles
Inspection:	Monthly By: EPA and TAT Personnel
Stretcher/Backboard:	N/A
Eye Wash Station:	By TAT Vehicle
Oxygen:	N/A
Safety Shower:	Water Will Be Available On-site

Fire-Fighting Equipment

Fire Extinguishers:	In EPA and TAT Vehicles
Inspection:	Monthly By: EPA and TAT Personnel

9.4 Project Personnel Responsibilities During Emergencies:

ON-SCENE COORDINATOR (OSC)

As the administrator of the project, the OSC has primary responsibility for responding to and correcting emergency situations. The OSC must:

- o Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, up-grading or down-grading the level of protective clothing and respiratory protection, or total evacuation and securing of the site.
- o Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- o Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- o Ensure that appropriate treatment or testing for exposed or injured personnel is obtained;
- o Determine the cause of the incident and make recommendations to prevent the recurrence; and,
- o Ensure that all required reports have been prepared.

SUBCONTRACT MANAGER (SM)

The SM must immediately report emergency situations to the WESTON Field Representative, take appropriate measures to protect site personnel and assist the WESTON Field Representative as necessary in responding to and mitigating the emergency situation.

WESTON FIELD REPRESENTATIVE

The WESTON Field Representative must immediately report emergency situations to the OSC, take appropriate measures to protect site personnel and assist the OSC as necessary.

9.5 Medical Emergencies:

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to the OSC.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they have been exposed to at the site. This information is included in Table 2.3.

Any vehicle used to transport contaminated personnel, will be tested and cleaned as necessary.

9.6 Fire or Explosion:

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival the OSC or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site.

If it is safe to do so, site personnel may:

- o Use fire fighting equipment available on site to control or extinguish the fire; and,
- o Remove or isolate flammable or other hazardous materials which may contribute to the fire.

9.7 Spill or Leaks:

In the event of a spill or a leak, site personnel will:

- o Inform their supervisor immediately;
- o Locate the source of the spillage and stop the flow if it can be done safely; and,
- o Begin containment and recovery of the spilled materials.

9.8 Evacuation Routes and Resources:

Evacuation routes have been established by work area locations for this site. All buildings and outside work areas have been provided with two designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency.

- o Evacuation notification will be a continuous blast on an air horn, vehicle horn, or by verbal communication via radio.
- o Keep upwind of smoke, vapors or spill location.
- o Exit through the decontamination corridor if possible.
- o If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
- o The OSC will conduct a head count to insure all personnel have been evacuated safely.
- o In the event that emergency site evacuation is necessary, all personnel are to:
 - 1. escape the emergency situation;
 - 2. decontaminate to the maximum extent practical; and,
 - 3. meet at the command post.
- o In the event that the command post is no longer in a safe zone, meet ON THE CORNER OF NEW YORK AVENUE AND RAVINE AVENUE.

ATTACHMENT A
SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT # _____:

SITE NAME: _____

DATE: _____

TYPE OF AMENDMENT: _____

REASON FOR AMENDMENT: _____

ALTERNATE SAFEGUARD PROCEDURES: _____

REQUIRED CHANGES IN PPE: _____

U.S. EPA HSO INFORMED: _____

ERCS CONTRACTOR HSO INFORMED: _____

TAT RSO INFORMED: _____

SITE SAFETY PLAN AMENDMENT # _____ :

SITE NAME: _____

DATE: _____

TYPE OF AMENDMENT: _____

REASON FOR AMENDMENT: _____

ALTERNATE SAFEGUARD PROCEDURES: _____

REQUIRED CHANGES IN PPE: _____

U.S. EPA HSO INFORMED: _____

ERCS CONTRACTOR HSO INFORMED: _____

TAT RSO INFORMED: _____

ATTACHMENT B

MAPS



SPILL PREVENTION &
EMERGENCY RESPONSE DIVISION

In Association with ICF Technology Inc., C.C. Johnson & Associates, Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

EPA PM

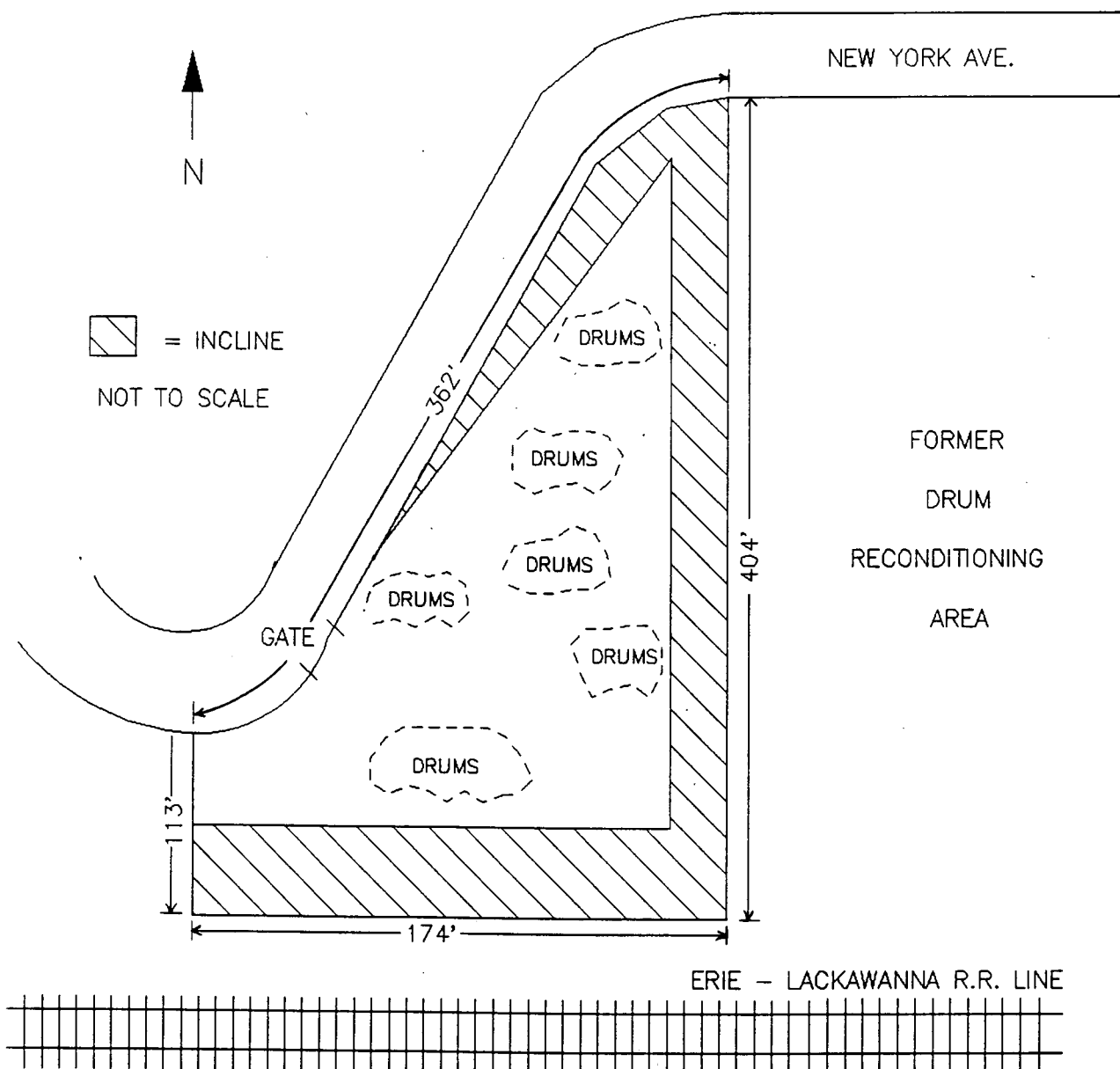
J. ROTOLA
D. HARKAY

LOCATION MAP

TAT PM

P. DI PASCA

IDEAL COOPERAGE SITE
JERSEY CITY, NJ



SPILL PREVENTION &
EMERGENCY RESPONSE

EPA PM

J. ROTOLA
D. HARKAY

SITE MAP

In Association with ICF Technology Inc., C.C. Johnson &
Malhotra, P.C., Resource Applications, Inc. and
R.E. Sarriera Associates

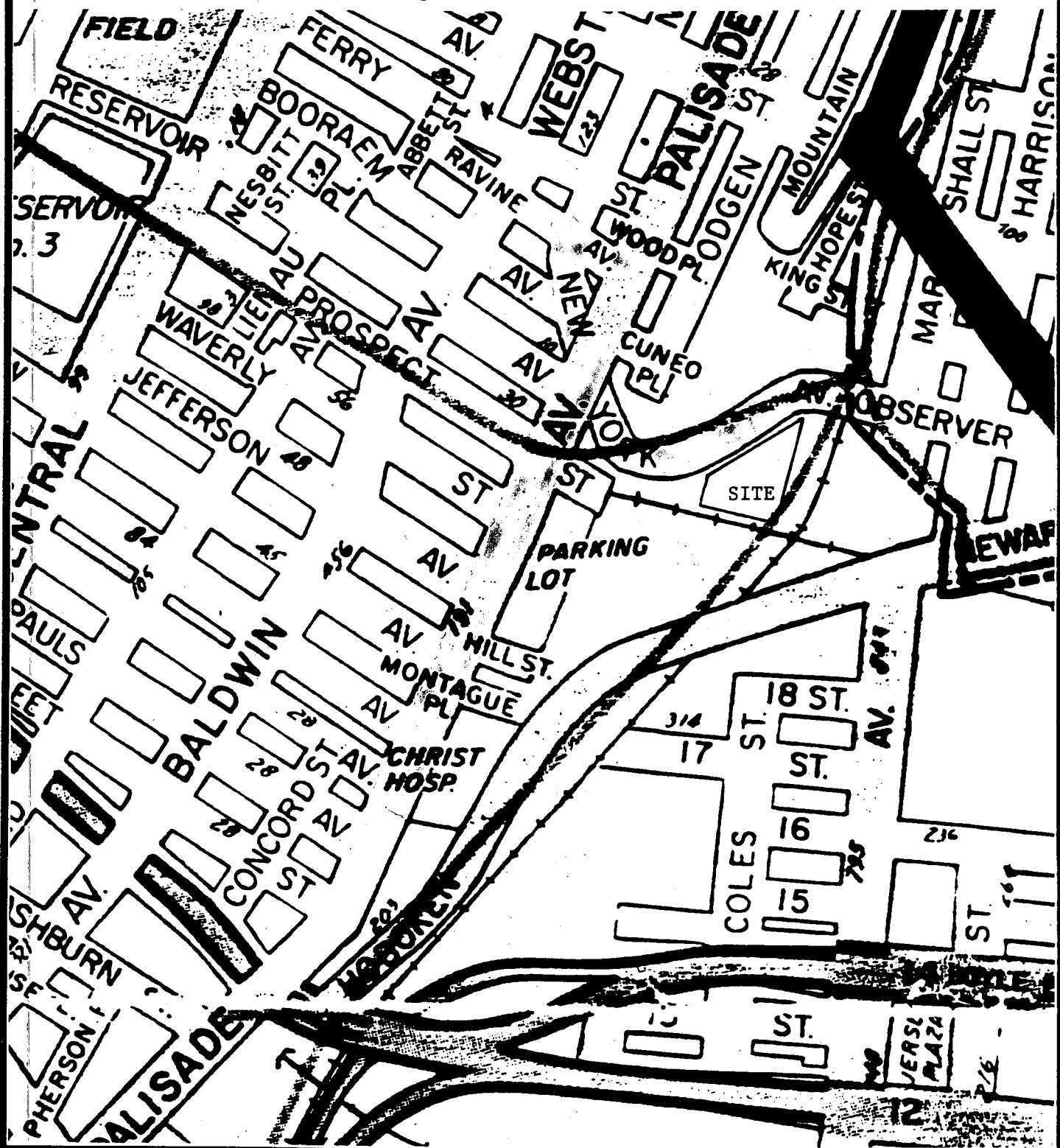
TAT PM

P. DI PASCA

IDEAL COOPERAGE SITE
JERSEY CITY, NJ

Directions from Site to Hospital

West on New York Avenue to Ravine Avenue (first cross-street).
 Right on Ravine Avenue for 1 block. Right on Palisade Avenue, and
 continue for 7 blocks. Hospital on left-hand side.



SPILL PREVENTION &
 EMERGENCY RESPONSE

EPA PM

J. ROTOLA
 D. HARKAY

ROUTE TO HOSPITAL

In Association with ICF Technology Inc., C.C. Johnson &
 Malhotra, P.C., Resource Applications, Inc. and
 R.E. Sarriera Associates

TAT PM

P. DI PASCA

IDEAL COOPERAGE SITE
 JERSEY CITY, NJ

ATTACHMENT C

COLD STRESS

HYPOTHERMIA AND FROSTBITE

A. Symptoms:

When exposed to cold temperature and/or cold water, the body reacts instinctively in a pattern designed to preserve itself. It resorts to involuntary reactions originating in the brain. When the brain recognizes any dangerous temperature drop in the body core, it signals the body to make adjustments to compensate for the imbalance. First, in an attempt to preserve normal temperatures in the vital internal organs, the blood vessels in the extremities constrict (vasoconstriction). This slows the blood flow to the arms and legs, preserving that energy and warm blood for the body core. If there is continued heat loss and if the body core temperature drops below 95°F (35°C), the body then tries to generate more heat through shivering, which causes metabolic heat production to increase to several times the normal rate. This is the first real warning sign of hypothermia. Further heat loss, accompanied by a body core temperature drop to 90°F (32.2°C) or below, results in speech difficulty, loss of manual dexterity, slow reactions, mental confusion and muscle rigidity (muscle hypertonus). If exposure continues further until the body's resources are exhausted and if the cold blood reaches the heart and the brain, heart failure and coma will result and lead inevitably to death. Death occurs when the body core temperature falls below 78°F (25.6°C).

If exposure occurs in temperatures which are below freezing (30°F or below), frostbite or trench foot (immersion foot) may accompany or complicate the symptoms of hypothermia. Frostbite is the freezing of living tissues with a resultant breakdown of cell structure. Injury due to frostbite may range from superficial redness of the skin, slight numbness and blisters, to the obstruction of blood flow (ischemia), blood clots (thrombosis) or skin discoloration due to insufficient oxygen in the blood (cyanosis). Frostbite may occur if the skin comes into contact with objects whose surface temperature is below freezing, such as metal tool handles. Trench foot is caused by continuous exposure to cold combined with persistent dampness or immersion in water. Injuries in this case include permanent tissue damage due to oxygen deficiency, damage to capillary walls, severe pain, blistering, tissue death and ulceration. Additionally, cold exposures may either induce or intensify vascular abnormalities. These include chilblain (a swelling or sore), Raynaud's disease, acrocyanosis (blueness of hands and feet) and thromboangiitis (inflammation of the innermost walls of blood vessels with accompanying clot formation). Workers suffering from these ailments should take particular precautions to avoid chilling.

Hypothermia damages both the body's internal temperature mechanisms (hypothalamus) and the peripheral mechanisms to prevent heat loss (vasoconstriction and perspiration). These effects may last up to three years.

3. Treatment:

If hypothermia occurs, certain first aid procedures can mean the difference between life and death for the victim. These include the following (as a general rule, treat all injuries in the order of their importance to preserving life):

For Hypothermia:

1. Give artificial respiration and stop any bleeding, if necessary.
2. Bring the victim into a warm room or shelter as quickly as possible.
3. If the victim cannot be moved (spinal injury, etc.) carefully place newspapers, blankets or some other insulation between him and the ground.
4. Remove all wet clothing.
5. Provide an external heat source, for the body cannot generate its own heat. Wrap the victim in prewarmed blankets, place him or her in the liner of a portable hypothermia treatment unit, put the torso (not the extremities) into a tub of warm water or use body-to-body contact to rewarm the body core. These measures will slowly reopen the peripheral circulation so as to minimize the possibility of after-shock or after-drop (the flowing of cooled, stagnated blood from the limbs to the heart), which may cause ventricular fibrillation, cardiac arrest or death.
6. Do not allow the victim to sleep.
7. Give warm, sweet drinks -- no alcohol or pain relievers.
8. Keep the victim still. Do not try to walk.
9. Do not rub numb skin.
10. Get medical help as soon as possible.

For Frostbite:

1. Wrap the victim in woolen cloth and keep dry until he or she can be brought inside.
2. Do not rub, chafe or manipulate frozen parts.
3. Bring the victim indoors.
4. Place the victim in warm water (102° to 105°F) and make sure it remains warm. Test the water by pouring it on the inner surface of your forearm. Never thaw affected parts if the victim has to go back out into the cold. The affected area may be refrozen.
5. Do not use hot water bottles or a heat lamp, and do not place the victim near a hot stove.
6. Do not allow the victim to walk if his or her feet are affected.
7. Have the victim gently exercise the affected parts once they are thawed.
8. Seek medical aid for thawing of serious frostbite, because the pain will be intense and tissue damage will be extensive.

ATTACHMENT D
DRUM SAMPLING SOP

DRUM SAMPLING SOP

Introduction

Many hazardous waste disposal sites and industrial facilities have containers on-site that may have to be sampled as part of investigations initiated under RCRA and CERCLA programs. These containers, specifically drums, may have a wide range of contents, including all types of inorganic and organic chemicals with a variety of physical and chemical characteristics. Since the opening and sampling of these drums could release toxic vapors or cause a violent reaction, such operations should be handled with the utmost safety precautions.

Preliminary Assessment

Once a decision to sample has been made, the site should be evaluated and the following information obtained:

1. Categorization of drums

The entire number of drums should be assessed and categorized into those containing the same or similar chemicals as well as unknown contents. Each of these categories should be considered as a separate group for sampling purposes.

2. The number, type and condition of drums

Prior to any sampling, the number of drums to be sampled should be determined. Depending on the needs of the program, these drums can be selected by accessibility or randomly. When selecting drums, it is important to select only top bung drums that are in good condition. Deteriorated drums (i.e., rusted, corroded, bulging, etc.) should not be opened or moved as the risk of a rupture or spill is greatly enhanced when dealing with these types of containers.

3. The suitability of the site for a safe and efficient operation

Care should be taken to insure the safety of the surrounding populace by checking proximity of the site to local residences, highways, railroads or other facilities. A contingency plan should be prepared and discussed with all pertinent personnel prior to initiating the operation. The plan should address mitigatory actions in the event of a spill, leak or explosion.

4. Hazards associated with the site

A thorough attempt should be made to ascertain the nature of the material in the drums to be sampled or moved. This can be done in a number of different ways including, review of past analyses, site history, employee and former employee interviews, etc. Any information related to the site should be considered in developing the contingency plan.

Pre-sampling Preparation

A sampling team should be formed based on information gathered in the preliminary assessment and the needs of the program. The sampling team should consist of at least three members, a team leader and two samplers. When possible, a designated safety officer should be included as an additional team member to assist in the development of the sampling and safety plans.

Drum Opening

The selection of a safe drum opening technique should be based on the information available on the contents of the drum. For drums that contain a known substance, the opening procedure may not be as complex as that for drums containing an unknown substance.

1. Containers with known contents

At least two persons should be used to sample drums. The samplers should be equipped with the proper safety equipment to deal with the material in the drum. If there is any doubt as to the nature of the drummed material, the drum should be handled as if the contents are unknown.

Drums with known contents that are not reactive or extremely volatile can be opened by hand with a non-sparking bung wrench. Drums that contain a reactive or volatile compound should be opened with a remote opener.

2. Containers with unknown contents

When opening a drums with unknown contents, it is highly recommended that the drum be opened in an area away from the main drum storage area. Methods for container movement are covered in Technical Methods for Investigation of Sites Containing Hazardous Substances, Technical Monograph No. 20, section 20.4.1.

Samplers that plan to open drums of unknown material should use a remote bung opening device. The personal protective gear for this operation should be at a minimum level B (SCBA and chemical protection suit). EPA's National Enforcement Investigation Center (NEIC) has developed two remote control

drum opening devices, a side penetrating device and a bung remover. For other than emergency response operations, the penetrating device is inappropriate and therefore is not discussed in this SOP.

The bung remover is designed to be used on vertical top bung drums only. The opener should only be used on drums of known integrity, i.e., not rusted or corroded. It is also recommended that the smaller diameter bung be opened first, if possible, as this operation requires less torque.

To set up the apparatus, the drum bracket should be aligned with the wrench bracket directly over the bung to be opened, and fastened securely to the drum. The non-sparking bung socket should then be placed on the bung and the impact wrench fastened into the drum bracket. The sampler should now attach the low pressure air hose to the drill and then return to the low pressure tank. The opening operation requires a short (2-5 second) burst of air from the tank. (The distance from the drum to the low pressure tank is variable depending on length of hose or the predesigned safety area). If the bung has not been loosened, the sampler should return to the drum to recheck the setup. Some common causes of problems are:

- 1) The drill is loose in its bracket.
- 2) The drill direction is reversed.
- 3) The drum bracket is not aligned properly.

If the set-up seems satisfactory, the drill should set up to remove the larger bung and the operation repeated. If the drum does not open after repeated attempts, another drum should be selected.

Sampling

The sampling method to be used is determined by the physical state of the drummed material (solid, liquid, sludge, etc.). It is important to coordinate the sampling effort with the laboratory. The lab will be able to indicate the amount of sample needed to perform the desired analysis.

1. Liquid Waste

To sample waste, a 4-foot length of glass tube should be used. The inside diameter of the tube will be dependent on the viscosity of the material (for most liquids, 6 to 8 mm I.D. tube should be adequate). To sample, one person should insert the tube into the drum. By sealing the top of the tube with a stopper or thumb, the sampler can extract a

sample from the drum. The other sampler should be holding the sample container and assist in transferring the material to the container. After collecting the sample, the glass tube is broken and placed in the drum.

Note: Sampling personnel should observe if multi-phase liquid layers are in the glass tube. Samples of each phase may be obtained using the same method. This will require separate sample containers for each phase if drum waste characterization is being performed.

2. Sludge Waste

For sludges, a larger bore glass tube may be needed. This may require removing the larger bung. A 40 ml glass vial fastened to a wooden dowel can be used in lieu of a large bore glass tube. The glass tube or vial and dowel should be disposed of properly, e.g., placed in the drum that was sampled, buried on-site, etc.

Note: If the small bung has already been removed, the large bung can be removed with a bung wrench.

3. Solid Waste

Occasionally, a drum containing a solid or granular waste may have to be sampled. These types of drums, often constructed of fiberboard, are easily sampled with a disposable scoop if the drum is an open-top. If the drum is closed, a brass or wood spoon attached to a wooden dowel may be used. To obtain core samples, two tools are recommended: a grain sampler or a sampling trier.

The grain sampler consists of two slotted telescoping tubes, usually made of brass or stainless steel. The outer tube has a conical, pointed tip on one end that permits the sampler to penetrate the material being sampled.

To sample:

1. Insert the sampler in the closed position into the material to be sampled.
2. Rotate the inner tube to open the sampler and wiggle the tube to allow materials to enter the device.
3. Remove the sampler from the material and transfer contents to appropriate sample container.

A typical sampling trier is a long tube with a slot that extends almost its entire length. The tip and edges are

sharpened to allow easier penetration into the material to be sampled. The use of the trier is similar to that of the grain sampler discussed above. However, the trier is preferred when sampling moist media.

To sample:

1. Insert the trier into the waste material at a slight angle and rotate the trier once or twice to cut a core of material.
2. Slowly withdraw the trier, making certain that the slotted portion is facing upward.
3. Transfer the sample to an appropriate container using a brush or spatula.

Only about 20 to 30 grams of this type of material are required for analysis.

Since both of these samplers are reusable, they should be decontaminated (pre-cleaned) in the field using cleanser and water and brought to the lab for solvent washing.

Note: Some of these solid materials may be reactive when exposed to the atmosphere. The sampler should note any changes in the physical characteristics (i.e. heat build-up, color change) of the sample and retreat to a safe area to discuss mitigatory procedures. It is recommended that non-sparking tools be used when sampling granular or solid media.

Drum Closing

After completion of the sampling activities, the drum should be resealed using a bung wrench.

ATTACHMENT E
SOIL SAMPLING SOP

SOIL SAMPLING SOP

This recommended protocol outlines procedures and equipment for the collection of representative samples from surface and subsurface locations.

Surface sampling commonly refers to the collection of samples at a 0-6 inch depth. This is most efficiently accomplished with the use of a trowel or scoop. For samples at lower depths, a decontaminated bucket auger or power auger may be needed to advance the hole to the point of collection. Another clean bucket auger can then be used to collect the sample. For samples at depths greater than three feet, the use of a drill rig and split spoon sampler will be necessary. In some situations, sample locations can be accessed with the use of a backhoe.

Whether surface or subsurface, and whether a bucket auger or drill rig is used to access the sample, several considerations are important during soil sample collection. An attempt must be made to maintain sample integrity by preserving its physical form and chemical composition to as great an extent as possible. First, the mechanism used to advance the hole must be properly decontaminated. The device then used for actual sample collection should not be same as that used to advance the hole. This instrument should be appropriately decontaminated, as should any instrument utilized to transfer the sample into the sample bottle.

Secondly, care must be taken in handling the sample. The sample should be transferred into the sample bottle as quickly as possible, with no mixing, to assure that the volatile fraction is not lost. It is also recommended that for volatile organics analysis of soils, the laboratory performing the analysis should provide wide mouth bottles (4 ounce) for sample collection. This will reduce disturbance of the sample and may help prevent the loss of volatiles.

Soil sampling is generally accomplished through the use of one of the following samplers:

- scoop or trowel
- tulip bulb-planter
- bucket auger
- soil coring device/silver bullet sampler
- waste pile sampler
- power auger (in conjunction with another device)
- split spoon sampler
- Shelby tube sampler

1. Surface Sampling

At the desired location, clear surface debris (e.g., rocks and twigs). Collect an adequate portion of soil from a depth of 0-6 inches, using a trowel or other device listed above. Transfer the sample directly into the sample container. For samples at lower depths, advance the hole using a bucket auger or power auger that has been properly decontaminated. Once at the desired depth, use a clean auger to retrieve the sample. Use a decontaminated spatula or trowel to transfer the sample directly into the sample bottle.

2. Subsurface Sampling

For sampling depths greater than three feet, a drill rig should be employed to advance a borehole to the desired depth. As with the near-surface samples, all down-hole devices must be thoroughly decontaminated. Once the desired depth is reached, a decontaminated sampling device (e.g., a split spoon or Shelby tube sampler) may be advanced by the drill rig. Upon retrieval, the split spoon should be opened, its contents logged if desired, and then immediately transferred into a sample bottle using a decontaminated spatula or spoon. If a Shelby tube is utilized, it should be properly sealed and prepared for shipment.

ATTACHMENT F
EXCAVATION SOP

EXCAVATION SOP

1. Soils - Modes of Failure

Stability is dependent on soil type, which can vary from rock to water-logged, with intermediates such as hard, compact, soft, sandy or filled. Although rock may be assumed stable, certain formations could prove otherwise when cut. For example, shear failure can occur along bedding planes, or due to vibration from plant machinery.

Failure may include:

- o Heave - results from loading (normal or super imposed) on either side of the excavation.
- o Boiling - in high water table/loose conditions.
- o Tension Cracks - may result in slippage or toppling of sides of excavation.
- o Stresses - in unsupported soil could cause bulging followed by subsidence.

2. Hazards

- o Workers may be buried by cave-in (suffocation or crushing). May be fatal.
- o Material, tools, rocks, and soil may fall into excavation if placed too close to edge. Should be no closer than 2 feet.
- o Falls during access/egress, or mounting/dismounting equipment. Stumbling into excavation.
- o Toxic, irritating or flammable atmospheres.
- o Overexertion from handling materials or equipment.
- o Insufficient working room for workers in the excavation. Separation of 12 feet suggested to prevent injury from handling of tools and materials.

3. Causes of Failure

- o Absence of shoring or adequate sloping to sides of excavation.
- o Misjudgment of stability. Decision may be taken against shoring, or shoring may be inadequate for condition.
- o Defective shoring
 - poor material or construction.
 - failure to adequately maintain system after adverse weather and other conditions.
- o Placing material or machinery too close to edge of excavation.
- o Undercut sides. Excavator may not have been level during operation.

4. Shoring

The regulations require shoring at or below a depth of 5 feet (may shortly be reduced to 4 feet). As an alternative, the sides of an excavation may be sloped according to soil conditions. Average conditions require 45°; extreme cases such as loose sand require approximately 26°.

Standard shoring systems consist of:

- a. Vertical Members - Poling or sheeting varying in size from 3" x 4 1/2" x 6" to 3" x 6". Poling spaced 4 feet c/c or closer for unstable soil conditions. Interlocked sheet piles are also used.
- b. Horizontal Members - Wales or stringers which bear against sides of excavation or sheeting. These vary in size from 4" x 6" to 6" x 8" at 4 feet c/c spacing vertically and 6 feet c/c horizontally.
- c. Struts or Braces - set against wales used together with cleats and hardwood wedges to keep system in place. Depending on width of excavation, these may be from 2" x 6 1/4" x 4" to 10" x 10". Spacing should be 4 feet c/c vertically and 6 feet c/c horizontally. Screw/hydraulic jacks may be used instead of timber struts.

Dismantling Shoring Systems

- o Dismantle from bottom up.
- o Back-fill as close as possible.
- o Use screw jacks if possible during removal of wedged timber members.

Utility and Public Service Lines

- o Care should be taken to avoid damage to these lines. If they are uncovered, they should be adequately protected (including supports) as necessary.
- o Relevant authorities could be requested to identify locations ahead of excavation work.

Exposure to Toxic/Flammable/Explosive Conditions

Precautions should be taken to determine concentrations, and adequate provisions made for ventilation. Avoid introduction of ignition sources. Internal combustion engines can also be a source of contamination. Avoid accumulation of exhaust gases in excavation.

ATTACHMENT Z
SITE SAFETY PLAN
ACKNOWLEDGEMENT FORM

SITE SAFETY PLAN ACKNOWLEDGEMENT FORM

I have been informed and understand and will abide by the procedures set forth in the Safety and Health Plan and Amendments for the Ideal Cooperage site.

Printed Name

Signature

Representing

Date

[illegible]